JOHN F. KENNEDY
SPACE CENTER

GP-790
November 20, 1969

THE X-15
A ROCKET-ASSISTED AIRCRAFT
A DEMAND BIBLIOGRAPHY

Prepared by

KENNEDY SPACE CENTER LIBRARY

November 28, 1969

JOHN F. KENNEDY SPACE CENTER, NASA

GP-790

THE X-15
A ROCKET-ASSISTED AIRCRAFT
A DEMAND BIBLIOGRAPHY

KENNEDY SPACE CENTER LIBRARY

APPROVAL

L. B. Russell

(Mrs.) L. B. Russell
KSC Librarian
Date Nov. 19, 1969

R. A. Lindemann

R. A. Lindemann
Chief, Historical & Library
Services Branch
Date Nov. 19, 1969

PREFACE

The X-15 experimental research program was begun officially with the first flight June 8, 1959. The program was discontinued in 1968. In that decade of testing the X-15 achieved speed and altitude records and demonstrated that earth exit and re-entry were well within the capability of a trained pilot. The knowledge gained from the test program contributed to the success of the manned space flight program.

The X-15 was also used for a variety of experiments: photographing stars from high altitude, micrometeorite collecting and earth horizon scanning as a navigational reference for the Apollo astronauts.

This listing of books, periodicals and documents on the X-15, rocket-assisted aircraft, was prepared by the STC staff of the KSC Library in response to an expressed individual need and is tailored to the requester's requirements.

Ruth E. Perks
Assistant to the STC Librarian

Vincent A. Rapetti
STC Librarian

TABLE OF CONTENTS

X-15

A DEMAND BIBLIOGRAPHY

1. BOOKS

COMPONENT PERFORMANCE AND FLIGHT OPERATIONS OF THE X-15 RESEARCH AIRPLANE PROGRAM. J. E. Love and W. R. Young. In: 1966 ANNUAL SYMPOSIUM ON RELIABILITY San Francisco, Calif. January 25-27, 1966 Proceedings Institute of Electrical and Electronic Engineers 1966 p 125-132 (A67-11341*; Ref/Tal68/S989)

THE CONCEPT OF THE DELTA WING X-15. A. Tweedie, L. M. Gaines and E. W. Johnston. In: AVIATION AND SPACE: PROGRESS AND PROSPECTS; PROCEEDINGS OF THE ANNUAL AVIATION AND SPACE CONFERENCE Beverly Hills, Calif. June 16-19, 1968 American Society of Mechanical Engineers 1968 p 487-494 (A68-33459; Ref/TL505/A512)

EXPERIENCE WITH THE X-15 AIRPLANE IN RELATION TO PROBLEMS OF RE-ENTRY VEHICLES. E. E. Kordes. International Council of the Aeronautical Sciences Congress 3rd Stockholm, Sweden August 27-31, 1962 Proceedings Spartan Books 1964 p 1157-1175 (A65-15591#; Ref/TL505/I61)

HISTORY OF ROCKETRY AND SPACE TRAVEL. W. Von Braun and F. I. Ordway III. T. Y. Crowel Co. 1966 p 204-205 illus (TL781/V945)

JANE'S ALL THE WORLD'S AIRCRAFT, 1968-1969. J. W. R. Taylor. B.P.C. Publishing Ltd. p 342 1969 (Ref/TL501/J33)

LOW-SPEED CHARACTERISTICS AND PILOTING TECHNIQUES OF LANDING THE X-15 RESEARCH AIRPLANE ON EARTH AND OTHER PLANETS. E. W. Johnston and L. M. Gaines. In: DYNAMICS OF MANNED LIFTING PLANETARY ENTRY. S. M. Scala, A. C. Harrison, and M. Rogers. Wiley 1963 p 668-700 (A63-23667; TL1050/S989)

MAN'S RELIABILITY IN THE X-15 AEROSPACE SYSTEM. R. B. Wilson and J. L. Gaffney. In: ANNUAL AEROSPACE RELIABILITY AND MAINTAINABILITY CONFERENCE, 3rd Washington, D. C. June 29-July 1, 1964 Proceedings Society of Automotive Engineers 1964 p 260-480. (A64-22635; Ref/TA168/A252/1964)

THE 1968 AEROSPACE YEARBOOK. 46th ed Aerospace Industries Association of America 1968 p R-06 illus (Ref/TL7898/A252)

NINETY SECONDS TO SPACE: THE X-15 STORY. J. Bergman. Doubleday 1960 222 p (TL 789.8.U6/B526)

OPERATIONAL EXPERIENCE OF THE X-15 AIRPLANE AS A REUSABLE VEHICLE SYSTEM. J. E. Love and W. R. Young. In: SPACE TECHNOLOGY CONFERENCE, Palo Alto, Calif. May 9-12, 1967 Proceedings Society of Automotive Engineers 1967 p 198-204 (A67-29848, Ref/TL600/S732)

PHYSIOLOGIC RESPONSE TO X-15 FLIGHT PROFILE. H. R. Bratt. In: PHYSICAL AND BIOLOGICAL PHENOMENA IN A WEIGHTLESS STATE. ADVANCES IN THE ASTRONAUTICAL SCIENCES, Vol. 14. E. T. Benedikt and R. W. Halliburton, editors. Western Periodicals Co. 1963 p 307-317 (A63-23698; TL787.A6/P578)

PRELIMINARY RESULTS OF BOUNDARY LAYER NOISE MEASURED ON THE X-15 AIRPLANE. L. E. Kordes and C. S. Tauner. In: ACOUSTICAL FATIGUE IN AEROSPACE STRUCTURES: PROCEEDINGS OF THE SECOND INTERNATIONAL CONFERENCE Dayton, Ohio April 29-May 1, 1964 W. J. Trapp and D. M. Forney, Jr., eds Syracuse University Press 1965 p 85-96 (A66-10126; Ref/TL671.6/161)

ROCKET ENCYCLOPEDIA ILLUSTRATED. J. W. Herric and E. Burgess, eds Aero Publishers 1959 580 p illus (Ref/TL780.5/H566)

SOLAR SPECTRUM MEASUREMENT EXPERIMENT--SYSTEM CONSIDERATIONS AND CURRENT STATUS. E. G. Love. INSTRUMENT SOCIETY OF AMERICA, ANNUAL CONFERENCE AND EXHIBIT, 20th, AND NATIONAL AEROSPACE INSTRUMENTATION SYMPOSIUM, 11th, Los Angeles, Calif. Oct. 4-7, 1965 Preprint no. 1.11-2-65 (A66-15511; Ref/Q184/159)

VEHICLES AND SENSORS. J. M. Harding. In: OPEN SPACE AND PEACE; SYMPOSIUM Stanford University, Stanford, Calif. September 4-6, 1963 Proceedings Hoover Institution 1964 p 55-63 (A65-22375; Ref/CB440/061)

X-15 DIARY; THE STORY OF AMERICA'S FIRST SPACE SHIP. R. W. Tregaskis. Dutten 1961 317 p (TL789.8U6/T786)

THE X-15 FLIGHT TEST INSTRUMENTATION. K. C. Sanderson. In: FLIGHT TEST INSTRUMENTATION. PROCEEDINGS OF THE THIRD INTERNATIONAL SYMPOSIUM Cranfield, Beds England April 13-16, 1964 Volume 3 M. A. Perry, ed Pergamon Press 1965 p 267-291 (A65-36048; Ref/TL671.7/161)

11. MAGAZINE ARTICLES

CONTRIBUTIONS OF THE X-15 PROGRAM TO LIFTING ENTRY TECHNOLOGY. E. C. Holleman and E. J. Adkins. Journal of Aircraft Nov.- Dec. 1964 p 360-366 (A65-12754#)

CURRENT AND ADVANCED X-15. E. W. Johnston. Journal of Aircraft Nov.- Dec. 1965 p 493-498 (A66-15072#)

GENERAL REVIEW OF PILOTING PROBLEMS ENCOUNTERED DURING SIMULATION AND FLIGHTS OF THE X-15. M. O. Thompson. Society of Experimental Test Pilots Technical Review Vol. 7 No. 4 1965 p 70-77 (A66-17274#)

INCREASED PILOTING TASKS AND PERFORMANCE OF X-15A-2 IN HYPERSONIC FLIGHT. W. J. Knight. Aeronautical Journal Sep. 1968 p. 793-802 (A68-43670)

INCREASED PILOTING TASKS AND PERFORMANCE OF X 15A-2 IN HYPERSONIC FLIGHT. W. J. Knight. Society of Experimental Test Pilots, Technical Review Vol. 8 No. 4 1967 p 311-323 (A68-21151#)

INSULATED X-15A-2 READY FOR SPEED TESTS. C. M. Platter. Aviation Week and Space Technology Jul. 24, 1967 p 74-81

OPERATIONAL FLIGHT-TEST EXPERIENCE WITH THE X-15 AIRPLANE. P. V. Row and J. Fischel. American Institute of Aeronautics and Astronautics Space Flight Testing Conference Cocoa Beach, Florida March 18-20, 1963 paper 63075 (A63-15995; Reprint File)

RAMJETS G. L. Dugger. Astronautics Nov. 1962 p 138-142 (A63-10209)

SPECTRAL RADIANCE MEASUREMENTS OF THE EARTH FROM HIGH ALTITUDES. H. E. Band. Applied Optics Mar. 1965 p 355-358 (A65-19278)

STRATOSPHERE AND MESOSPHERE DENSITIES MEASURED WITH THE X-15 AIRPLANE. T. J. Larson and E. J. Montoya. Journal of Geophysical

A TECHNIQUE FOR MEASURING MESOSPHERIC DENSITIES WITH THE X-15 RESEARCH AIRPLANE. T. J. Larson and M. A. Covington. American Institute of Aeronautics and Astronautics Aerospace Sciences Meeting 4th Los Angeles, Calif. June 27-29, 1966 paper 66-441 (A66-33646#)

ULTRAVIOLET DAYGLOW MEASUREMENT WITH THE X-15 AIRCRAFT. L. R. Doherty. Journal of Geophysical Research Jun. 1, 1968 p 3597-3598 (A68-31482*#)

THE X-15 AS A TOOL FOR PROGRESS IN HYPERSONIC FLIGHT. J. Walker. International Congress on Air Technology Little Rock, Ark. Nov. 15-18, 1965 6 p (A66-31285#)

X-15 FLIGHT-TEST EXPERIENCE. P. V. Row and J. Fischel. Astronautics and Aerospace Engineering Jun. 1963 p 25-32 (A63-17556)

X-15A-2 ADVANCED CAPABILITY. R. A. Hoover and R. A. Rushworth. In: SOCIETY OF EXPERIMENTAL TEST PILOTS, ANNUAL SYMPOSIUM 8th Beverly Hills, Calif. Sept. 25, 1964 Proceedings Society of Experimental Test Pilots, Technical Review Vol. 7 No. 2 1964 p 6-18 (A65-15971#)

III. DOCUMENTS

ADVANCED AIR DATA SENSING TECHNIQUES. R. K. Boque and L. D. Webb. National Aeronautics and Space Administration, Flight Research Center 1968 33 p (NASA TM-X-61115; N68-37326#)

ADVANCED X-15A-2 ABLATION SYSTEM DESIGN, TESTS, AND ANALYSIS. R. H. Johnson. North American Aviation, Inc. Feb. 14, 1964. 178 p (NA-64-177; N65-11064#)

AERODYNAMIC AND CONTROL-SYSTEM CONTRIBUTIONS TO THE X-15 AIRPLANE LANDING-GEAR LOADS. R. B. Noll et al. National Aeronautics and Space Administration, Flight Research Center Oct. 1963 35 p (NASA TN-D-2090; N63-22117)

AERODYNAMIC CHARACTERISTICS OF A 0.0667-SCALE MODEL OF THE NORTH AMERICAN X-15 RESEARCH AIRPLANE AT TRANSONIC SPEEDS. R S. Osborne. National Aeronautics and Space Administration, Langley Research Center Sep. 1959 109 p. (NASA TM-X-24; N63-12975#) (Declassified)

AERODYNAMIC CHARACTERISTICS OF A 0.0667-SCALE MODEL OF THE X-15A-2 J. C. Patterson. National Aeronautics and Space Administration, Langley Research Center Mar. 1966 76 p (NASA TM-X-1198; N66-17888*#)

AERODYNAMIC CHARACTERISTICS OF THE X-15/B-52 COMBINATION. W. J. Alford, Jr. and R. T. Taylor. National Aeronautics and Space Administration, Langley Research Center (NASA MEMO 6-8-59L; N63-12502#)

AERODYNAMIC FORCES ON COMPONENTS OF THE X-15 AIRPLANE. E. R. Keener and C. Pembo. National Aeronautics and Space Administration, Flight Research Center Mar. 1962 12 p (NASA TM-X-712; N65-23920*#)

ANALYSIS OF BOUNDARY-LAYER TRANSITION ON X-15-2 RESEARCH AIRPLANE. A. L. Braslow. National Aeronautics and Space Administration, Langley Research Center Jul. 1966 18 p (NASA TN-D-3487; N66-30177*#)

AN ANALYSIS OF THE LIMIT-CYCLE AND STRUCTURAL-RESONANCE CHARACTERISTICS OF THE X-15 STABILITY AUGMENTATION SYSTEM. L. W. Taylor, Jr. and J. W. Smith. National Aeronautics and Space Administration, Flight Research Center Dec. 1967 52 p (NASA TN-D-4287; N68-11545*#)

ANALYTICAL INVESTIGATION AND PREDICTION OF SPIN AND RECOVERY CHARACTERISTICS OF THE NORTH AMERICAN X-15 AIRPLANE. W. D. Grantham and S. H. Scher. National Aeronautics and Space Administration, Langley Research Center Oct. 1960 48 p (NASA TM-X-294; N63-12553)

APPLICATION AND REFURBISHMENT PROCEDURES X-15A-2 THERMAL PROTECTION SYSTEM. J. T. Thompson and A. B. Price. Martin Co. May 23, 1968 111 p rev supersedes ER-14539 Mar. 1967 (NASA CR-96000; ER-14539, rev 1; N68-25389*#)

ARC-TUNNEL EVALUATION OF SOME ABLATIVE HEAT SHIELD MATERIALS FOR THE X-15-2. A. J. Chapman and M. B. Dow. National Aeronautics and Space Administration, Langley Research Center (NASA TN-D-3753; N67-16687*#)

BASIC PRESSURE COEFFICIENTS OBTAINED FROM THE X-15 AIRPLANE FOR MACH NUMBERS UP TO 6. E. J. Saltzman. National Aeronautics and Space Administration, Flight Research Center Aug. 1964 47 p (NASA TN-D-2420; N64-27122)

BASIC PRESSURE MEASUREMENTS ON A 0.0667-SCALE MODEL OF THE NORTH AMERICAN X-15 RESEARCH AIRPLANE AT TRANSONIC SPEEDS. R. S. Osborne and V. C. Stafford. National Aeronautics and Space Administration, Langley Research Center Oct. 1960 102 p (NASA TM-X-344; N63-12560)

CALIBRATIONS AND COMPARISONS OF PRESSURE-TYPE AIRSPEED-ALTITUDE SYSTEMS OF THE X-15 AIRPLANE FROM SUBSONIC TO HIGH SUPERSONIC SPEEDS. T. J. Larson and L. D. Webb. National Aeronautics and Space Administration, Flight Research Center Feb. 1963 37 p (NASA TN-D-1724; N63-12951)

CHARACTERISTICS AND USE OF X-15 AIR-DATA SENSORS. L. D. Webb. National Aeronautics and Space Administration, Flight Research Center Jun. 1968 59 p (NASA TN-D-4597; N68-25317*#)

COMPARISON OF FULL-SCALE LIFT AND DRAG CHARACTERISTICS OF THE X-15 AIRPLANE WITH WIND-TUNNEL RESULTS AND THEORY. E. J. Hopkins, D. E. Fetterman, and E. J. Saltzman. National Aeronautics and Space Administration, Ames Research Center Mar. 1962 18 p (NASA TM-X-713; N65-23921*#) (Declassified)

CONFERENCE ON THE PROGRESS OF THE X-15 PROJECT; RESEARCH-AIRPLANE-COMMITTEE REPORT. Compilation of the papers presented at the

Langley Aeronautical Laboratory, Langley Field, Va. October 25-26 1956. National Aeronautics and Space Administration, Langley Research Center 1956 277 p (N65-24101*#) (Declassified)

CONTROL EXPERIENCES OF THE X-15 PERTINENT TO LIFTING ENTRY. E. C. Holleman.National Aeronautics and Space Administration, Flight Research Center Feb. 1966 16 p (NASA TN-D-3262; N66-15643*#)

CONTROLLABILITY OF THE X-15 RESEARCH AIRPLANE WITH INTERIM ENGINES DURING HIGH-ALTITUDE FLIGHTS. E. C. Holleman and D. Reisert. National Aeronautics and Space Administration, Flight Research Center Mar. 1961 22 p (NASA TM-X-514; N63-14767) (Declassified)

CORRELATION OF X-15 SIMULATION EXPERIENCE WITH FLIGHT TEST RESULTS. R. G. Hoey. Presented at 28th meeting of the AGARD Flight Mechanics Panel, Paris May 10-11 1966 24 p (AGARD-530;N67-23247#)

DESCRIPTION OF AN ENERGY MANAGEMENT SYSTEM FOR THE X-15. W. G. Cockayne. Bell Aerosystems Co. Jun. 1968 143 p (NASA CR-96006; N69-16923*#)

DESIGN AND OPERATION OF THE X-15 HYPERSONIC RESEARCH AIRPLANE. G. R. Mellinger. Advisory Group for Aeronautical Research and Development. Oct. 1960 32 p (AGARD Report 288)

DRAG AND WEAR CHARACTERISTICS OF VARIOUS SKID MATERIALS ON DISSIMILAR LAKEBED SURFACES DURING THE SLIDEOUT OF THE X-15 AIRPLANE. R. J. Wilson. National Aeronautics and Space Administration, Flight Research Center Mar. 1966 28 p (NASA TN-D-3331; N66-18172*#)

ESTIMATED PERFORMANCE REPORT FOR THE ADVANCED X-15A-2 AIRPLANE WITH ONE YLR-99-RM-1 ENGINE, NAA MODEL NO. NA-240-2, April-June 1964. A. F. Tweedie. North American Aviation, Inc. Jul. 9, 1964 70 p (NA-64-574; AD-452 641; N65-12476#)

EVALUATION OF AN INFRARED HEATING SIMULATION OF A MACH 4.63 FLIGHT ON AN X-15 HORIZONTAL STABILIZER. R. A. Fields and A. Vano. National Aeronautics and Space Administration, Flight Research Center Sept. 1969 35 p (NASA TN-D-5403; N69-35949*#)

EVALUATION OF A VERTICAL-SCALE, FIXED-INDEX INSTRUMENT DISPLAY PANEL FOR THE X-15 AIRPLANE. L. E. Lytton. National Aeronautics and Space Administration, Flight Research Center May 1967 28 p (NASA TN-D-3967; N67-25037*#)

EXPERIMENTAL AND CALCULATED SUPERSONIC FLUTTER CHARACTERISTICS OF MODELS OF THE X-15 HORIZONTAL AND VERTICAL TAILS. W. T. Laubern, Jr. and R. W. Hess. National Aeronautics and Space Administration, Langley Research Center Dec. 1959 39 p (NASA TM-X-176; N65-12696*#) (Declassified)

THE EXPERIMENTAL ROCKET RESEARCH AIRCRAFT PROGRAM, 1946-1962. Air Force Flight Test Center 1962 71 p (AFSC Historical Publication Series 62-110V; N63-11761#)

FLIGHT DEMONSTRATION OF A SKIN-FRICTION GAGE TO A LOCAL MACH NUMBER OF 4.9 D. J. Garringer and E. J. Saltzman. National Aeronautics and Space Administration, Flight Research Center Feb. 1967 27 p (NASA TN-D-3830; N67-17173*#)

FLIGHT-MEASURED WING SURFACE PRESSURES AND LOADS FOR THE X-15 AIRPLANE AT MACH NUMBERS FROM 1.2 to 6.0. J. S. Pyle. National Aeronautics and Space Administration, Flight Research Center Jan. 1965 45 p (NASA TN-D-2282; N65-14854*#)

FLIGHT MEASUREMENTS OF BOUNDARY-LAYER NOISE ON THE X-15. T. L. Lewis and N. J. McLeod. National Aeronautics and Space Administration, Flight Research Center Mar. 1966 15 p (NASA TN-D-3364; N66-19602*#)

FLIGHT MEASUREMENTS OF STABILITY AND CONTROL DERIVATIVES OF THE X-15 RESEARCH AIRPLANE TO A MACH NUMBER OF 6.02 AND AN ANGLE OF ATTACK OF 25°. R. B. Yancey. National Aeronautics and Space Administration, Flight Research Center Nov. 1964 49 p (NASA TN-D-2532; N65-10638*#)

FLIGHT PRESSURE DISTRIBUTIONS ON THE VERTICAL STABILIZERS AND SPEED BRAKES OF THE X-15 AIRPLANE AT MACH NUMBERS FROM 1 to 6. J. S. Pyle. National Aeronautics and Space Administration, Flight Research Center Oct. 1965 56 p (NASA TN-D-3048; N65-34437*#)

FLOW-FIELD INVESTIGATIONS ON THE X-15 AIRPLANE AND MODEL UP TO HYPERSONIC SPEEDS. L. J. McLain and M. Palitz. National Aeronautics and Space Administration, Flight Research Center Sep. 1968 31 p (NASA TN-D-4813; N68-35173*#)

FLOW FIELD SURVEY AND DECELERATOR DRAG CHARACTERISTICS IN THE WAKE OF A MODEL OF THE X-15 AIRPLANE AT MACH 2.30 AND 4.65. J. F. Campbell. National Aeronautics and Space Administration, Langley Research Center Feb. 1966 37 p (NASA TN-D-3285; N66-16563*#)

FLUTTER INVESTIGATION AT A MACH NUMBER OF 7.2 OF MODELS OF THE HORIZONTAL-TAIL AND VERTICAL-TAIL SURFACES OF THE X-15 AIRPLANE. F. W. Gibson and J. S. Mixson. National Aeronautics and Space Administration, Langley Research Center May 1959 29 p (NASA MEMO-4-14-59L; N66-33350*#) (Declassified)

FULL SCALE FLIGHT TEST REPORT, X-15A-2 ABLATIVE THERMAL PROTECTION SYSTEM. A. B. Price. Martin Co May 23, 1968 175 p (NASA CR-82004; MCR-68-15, Rev. I; N68-25886*#)

HEAT-TRANSFER MEASUREMENTS OF A 0.0667-SCALE MODEL OF THE X-15 AIRPLANE FOR AN ANGLE-OF-ATTACK RANGE OF 0° to 28° AT MACH NUMBERS OF 2.88 AND 4.65. E. A. Price, Jr. and N. L. Taylor and P. B. Burbank. National Aeronautics and Space Administration, Langley Research Center Jun. 1963 142 p (NASA TM-X-821; N65-23926*#) (Declassified)

HORIZONTAL LANDING TECHNIQUES FOR HYPERSONIC VEHICLES. R. G. Hoey. Advisory Group for Aeronautical Research and Development. Jan. 1963 11 p (AGARD Report 428)

INSTRUMENTATION DESIGN STUDY FOR TESTING A HYPERSONIC RAMJET ENGINE ON THE X-15 A-2. Vol. 2: PRELIMINARY DESIGN OF IN-FLIGHT THRUST/DRAG MEASUREMENTS. D. J. DeMichele et. al. General Electric Co., Advanced Engine and Technology Dept. Mar. 1965 190 p (NASA CR-62183; N65-21464*#)

INSTRUMENTATION DESIGN STUDY FOR TESTING A HYPERSONIC RAMJET ENGINE ON THE X-15A-2, Vol. 3: CONCEPTUAL DESIGN OF MEASUREMENT SYSTEMS. J. E. Fischer et. al. General Electric Co., Advanced Engine and Tecnology Dept. Mar. 20, 1965 182 p (NASA-CR-62148; N65-21465*#)

INVESTIGATION OF AN ALL-MOVABLE CONTROL SURFACE AT A MACH NUMBER OF 6.86 FOR POSSIBLE FLUTTER. W. T. Lauten, G. M. Levey and W. O. Armstrong. National Aeronautics and Space Administration, Langley Research Center May 8, 1958 20 p (NACA RM-L58B27; N65-33269*#)

INVESTIGATION OF THE AERODYNAMIC CHARACTERISTICS OF A 0.02 SCALE MODEL OF THE X-15 AIRPLANE AT MACH NUMBERS OF 2.96, 3.96, AND 4.65 AT HIGH ANGLES OF ATTACK. R. L. McKinney and J. A. Lancaster. National Aeronautics and Space Administration, Langley Research Center Jun. 1963 192 p (NASA TM-X-820; N65-23925*#)

INVESTIGATION OF THE AERODYNAMIC CHARACTERISTICS OF A 0.067 SCALE MODEL OF THE X-15 AIRPLANE (CONFIGURATION 2) AT MACH NUMBERS OF 2.29, 2.98, 3.96 AND 4.65. A. E. Franklin and H. N. Silvers. National Aeronautics and Space Administration, Langley Research Center May 1959 247 p (NASA MEMO-4-27-59L, N65-23076*#)

INVESTIGATION OF THE AERODYNAMIC CHARACTERISTICS OF 0.067 SCALE MODEL OF THE X-15 AIRPLANE (CONFIGURATION 3) AT MACH NUMBERS OF 2.29, 2.98 AND 4.65. A. E. Franklin and R. M. Lust. National Aeronautics and Space Administration, Langley Research Center Nov. 1959 170 p (NASA TM-X-38; N65-12687*#) (Declassified)

INVESTIGATION OF THE LOADING CHARACTERISTICS OF THE LIFTING SURFACES AND THE SPEED BRAKES OF A 0.067-SCALE MODEL OF THE NORTH AMERICAN X-15 AIRPLANE (CONFIGURATION 3) AT MACH NUMBERS OF 2.29, 2.98 AND 4.65. H. N. Silvers, J. A. Lancaster and J. S. Wills. National Aeronautics and Space Administration, Langley Research Center Sep. 1960 163 p (NASA TM-X-301; N65-12798*#) (Declassified)

LANDING - GEAR BEHAVIOR DURING TOUCHDOWN AND RUNOUT FOR 17 LANDINGS OF THE X-15 RESEARCH AIRPLANE. J. M. McKay and B. J. Scott. National Aeronautics and Space Administration; Flight Research Center Mar. 1961 54 p (NASA TM-X-518; N63-12563#)

LANDING LOADS AND DYNAMICS OF THE X-15 AIRPLANE. J. M. McKay and E. E. Kordes. National Aeronautics and Space Administration, Flight Research Center Mar. 1962 17 p (NASA TM-X-639; N63-12564)

LATERAL-DIRECTIONAL CONTROL OF THE X-15 AIRPLANE. F. S. Petersen, H. A. Rediess and J. Weil. National Aeronautics and Space Administration, Flight Research Center Mar. 1962 26 p (NASA TM-X-726; N65-23924*#) (Declassified)

MEASURED AND CALCULATED FLOW CONDITIONS ON THE FORWARD FUSELAGE OF THE X-15 AIRPLANE AND MODEL AT MACH NUMBERS FROM 3.0 TO 8.0. M. Palitz. National Aeronautics and Space Administration, Flight Research Center Jun. 1966 46 p (NASA TN-D-3447; N66-26849*#)

OPERATIONAL AND PERFORMANCE CHARACTERISTICS OF THE X-15 SPHERICAL, HYPERSONIC FLOW-DIRECTION SENSOR. C. H. Wolowicz and T. D. Gossett. National Aeronautics and Space Administration, Flight Research Center 1966 21 p (NASA TN-D-3070; N66-10603*#)

OPERATIONAL EXPERIENCE WITH THE X-15 REACTION CONTROL AND REACTION AUGMENTATION SYSTEMS. C. R. Jarvis and W. P. Lock. National Aeronautics and Space Administration, Flight Research Center Jun. 1965 50 p (NASA TN-D-2864; N65-25725*#)

OPERATIONAL EXPERIENCE WITH X-15 REACTION CONTROLS. C. R. Jarvis and E. J. Adkins. National Aeronautics and Space Administration, Flight Research Center Apr. 21, 1964 24 p (NASA TM-X-56002; N64-20683*)

OPERATIONAL EXPERIENCES AND CHARACTERISTICS OF THE X-15 FLIGHT CONTROL SYSTEM. R. A. Tremont. National Aeronautics and Space Administration, Flight Research Center Dec. 1962 50 p (NASA TN-D-1402; N63-11123#)

PILOT EXPERIENCE WITH THE X-15 AIRPLANE. R. A. Rushworth. In: Advisory Group for Aeronautical Research and Development Proceedings of the 12th AGARD General Assembly Sep. 1962 p 117-123. (N64-11884#)

PILOTED SIMULATIONS FOR ATMOSPHERE REENTRY OF SPACE VEHICLES. R. C. Wingrove. In: AGARD Simulation for Aerospace Res. Feb. 1964 p 131-155. (N66-12674 in N66-12667#)

PILOTING PERFORMANCE DURING THE BOOST OF THE X-15 AIRPLANE TO HIGH ALTITUDE. E. C. Holleman. National Aeronautics and Space Administration, Flight Research Center Apr. 1964 56 p (NASA TN-D-2289; N64-19002*)

PITOT MEASUREMENTS ON AN X-15 ROCKET PLANE: FINAL REPORT, 1 Oct. 1963-31 Mar. 1968. J. J. Horvath and G. F. Rufert. Michigan University, Space Physics Research Lab. Aug. 1968 51 p (AD-675579; AFCRL 68-0383; Rept.-06093-1-F; N69-11833#)

PRELIMINARY INVESTIGATION OF DYNAMIC LATERAL STABILITY CHARACTERISTICS OF A CONFIGURATION OF THE NORTH AMERICAN X-15 RESEARCH AIRPLANE. M. T. Moul. National Aeronautics and Space Administration, Langley Research Center Dec. 3, 1958 41 p (NACA RM-L56L27; N65-12718*#) (Declassified)

PRELIMINARY RESULTS OF AERODYNAMIC HEATING STUDIES ON THE X-15 AIRPLANE. R. D. Bauner, A. E. Kuhl and R. D. Quinn. National Aeronautics and Space Administration, Flight Research Center Mar. 1962. (NASA TM-X-638; N66-29468*#) (Declassified)

PRELIMINARY RESULTS OF BOUNDARY-LAYER NOISE MEASURED ON THE X-15 AIRPLANE. E. E. Kordes and C. S. Tanner. Presented at the 2nd International Conference on Acoustical Fatigue Dayton, Ohio 29 April- 1 May 1964 13 p (NASA TM-X-56003; N65-35284*#)

PRESSURE DISTRIBUTION OF A 0.0667-SCALE MODEL OF THE X-15 AIRPLANE FOR AN ANGLE-OF-ATTACK RANGE OF 0° TO 28° AT MACH NUMBERS OF 2.30, 2.88, AND 4.65. B. L. Hodge and P. B. Burbank. National Aeronautics and Space Administration, Langley Research Center 1960 161 p (NASA TM-X-275; N63-12646)

RADIOMETRIC MEASUREMENTS OF THE EARTH'S INFRARED HORIZON FROM THE X-15 IN THREE SPECTRAL INTERVALS. A. Jalink, Jr. and R. E. Davis. National Aeronautics and Space Administration, Langley Research Center Jul. 1968 57 p (NASA TN-D-4654; N68-28262*#)

THE RECORD-SETTING RESEARCH AIRPLANES. J. A. Martin. Reprinted from Aerospace Engineering, Dec. 1962 p 49-54. National Aeronautics and Space Administration, Flight Research Center (N63-13571#)

RESEARCH ON X-15 BACKGROUND MEASUREMENTS: INTERIM ENGINEERING REPORT. R. H. Bingham. Northrop Space Labs. Oct. 1, 1964 19 p (AD-450 652; N65-13617#)

RESEARCH ON X-15 BACKGROUND MEASUREMENTS; INTERIM ENGINEERING REPORT, 1 Oct. 1964-20 Mar. 1965. R. H. Bingham. Northrop Space Labs. Mar. 23, 1965 15 p (IE-R-2; AD-460464; N65-21031#)

RESUMÉ OF HANDLING QUALITIES OF THE X-15 AIRPLANE. R. M. White and G. H. Robinson and G. J. Matranga. National Aeronautics and Space Administration, Flight Research Center Mar. 1962 19 p (NASA TM-X-715; N65-23923*#) (Declassified)

REVIEW OF TECHNIQUES APPLICABLE TO THE RECOVERY OF LIFTING HYPERVELOCITY VEHICLES. J. Weil and G. J. Matranga. National Aeronautics and Space Administration, Flight Research Center 1960 17 p (NASA TM-X-334; N63-17993) (Declassified)

THE ROLE OF THE PILOT IN THE MERCURY AND X-15 FLIGHTS. W. C. Williams In: AGARD Proceedings of the 14th AGARD General Assembly 1964 p 65-81 (N65-28453#)

SKIN AND STRUCTURAL TEMPERATURES MEASURED ON THE X-15 AIRPLANE DURING A FLIGHT TO A MACH NUMBER OF 3.3 R. D. Reed and J. D. Watts. National Aeronautics and Space Administration, Flight Research Center Jan. 1961 24 p (NASA TM-X-468; N63-13912) (Declassified)

STABILITY AND CONTROL CHARACTERISTICS OF A 0.0667-SCALE MODEL OF THE FINAL VERSION OF THE NORTH AMERICAN X-15 RESEARCH AIRPLANE (CONFIGURATION 3) AT TRANSONIC SPEEDS. R. S. Osborne. National Aeronautics and Space Administration. Apr. 1963 3 p (NASA TM-X-758; N63-14247#)

STABILITY AND CONTROL DERIVATIVE CHARACTERISTICS OF THE X-15 AIRPLANE. H. J. Walker and C. H. Wolowicz. National Aeronautics and Space Administration, Flight Research Center Mar. 1962 31 p (NASA TM-X-714; N65-23922*#) (Declassified)

STAGNATION AND STATIC PRESSURES ON A NOSE MOUNTED 15° CONICAL PROBE WITH VARIOUS FOREBODY CONFIGURATIONS. E. M. Coates, Jr. National Aeronautics and Space Administration, Langley Research Center Aug. 1966 118 p (NASA TN-D-3526; N66-33018*#)

THE STATIC AND DYNAMIC-ROTARY STABILITY DERIVATIVES OF A MODEL OF THE X-15 RESEARCH AIRPLANE AT MACH NUMBERS FROM 1.55 to 3.50. P. J. Tunnell and E. A. Latham. National Aeronautics and Space Administration, Ames Research Center Jan. 1959 47 p (NASA-MEMO-12-23-58A; N65-12721*#) (Declassified)

STATIC LONGITUDINAL, DIRECTIONAL, AND LATERAL STABILITY AND CONTROL DATA AT A MACH NUMBER OF 6.83 OF THE FINAL CONFIGURATION OF THE X-15 RESEARCH AIRPLANE. J. A. Penland and D. E. Fetterman, Jr. National Aeronautics and Space Administration, Langley Research Center Apr. 1960 82 p (NASA TM-X-236; N66-33320*#) (Declassified)

THE STATIC STABILITY CHARACTERISTICS OF SEVERAL PRELIMINARY MODELS OF THE X-15 RESEARCH AIRPLANE AT MACH NUMBERS OF 2.98 AND 4.01. R. W. Dunning. National Aeronautics and Space Administration, Langley Research Center Nov. 1959 62 p (NASA TM-X-166, N65-12693*#) (Declassified)

STATISTICAL ANALYSIS OF LANDING CONTACT CONDITIONS OF THE X-15 AIRPLANE. R. J. Wilson. National Aeronautics and Space Administration, Flight Research Center Jan. 1967 20 p (NASA TN-D-3801; N67-14935*#)

STATUS OF X-15 AERODYNAMIC-HEATING STUDIES. R. D. Banner and M. R. Kinsler. American Rocket Society 1961 17 p (ARS Paper 1629-61; N63-15312#)

STRATOSPHERE AND MESOSPHERE DENSITY-HEIGHT PROFILES OBTAINED WITH THE X-15 AIRPLANE. E. J. Montoya and T. J. Larson. National Aeronautics and Space Administration, Flight Research Center 1963 24 p (NASA TM-X-51734; N65-33708*#)

A STUDY OF DISPLAY INTEGRATION FOR HYPERSONIC RESEARCH VEHICLES. FIRST QUARTERLY PROGRESS REPORT 16 May- 16 Aug. 1963. C. F. Schaefer and P. R. Williams. United Aircraft Corp., Norden Div. Sep. 13, 1963 53 p (NASA CR-77937; Rept. 1141-R-0003A; N66-36247*#)

STUDY OF DISPLAY INTEGRATION FOR HYPERSONIC RESEARCH VEHICLES; FINAL ENGINEERING REPORT, 15 May-15 Nov. 1963. C. F. Schaefer. United Aircraft Corp., Norden Div. Nov. 15, 1963 159 p (NASA CR-58177; Rept.-1141-R-0004; N64-27380*)

A STUDY OF TWO PROPOSED STABILIZATION TECHNIQUES FOR THE X-15 HORIZONTAL SURFACE CONTROL SYSTEM. W. R. Deazley. Cornell Aeronautical Lab., Flight Research Dept. Aug. 10, 1961 84 p (NASA CR-95955; CAL-TB-1568-F-1; N68-31411*#)

STUDY OF UNDEREXPANDED EXHAUST JETS OF AN X-15 AIRPLANE MODEL AND ATTACHED RAMJET ENGINE SIMULATOR AT MACH 6.86. E. H. Andrews, Jr. and C. R. Rogers. National Aeronautics and Space Administration, Langley Research Center May 1968 (NASA TM-X-1571; N68-24614*#)

SUMMARY OF FULL-SCALE LIFT AND DRAG CHARACTERISTICS OF THE X-15 AIRPLANE. E. J. Saltzman and D. J. Garringer. National Aeronautics and Space Administration, Flight Research Center Mar. 1966 49 p (NASA TN-D-3343; N66-19345*#)

SUMMARY OF HIGH-ALTITUDE AND ENTRY FLIGHT CONTROL EXPERIENCE WITH THE X-15 AIRPLANE. E. C. Holleman. National Aeronautics and Space Administration, Flight Research Center Apr. 1966 68 p (NASA TN-D-3386; N66-21041*#)

A SUMMARY OF THE X-15 LANDING LOADS. J. M. McKay and R. B. Noll. National Aeronautics and Space Administration, Flight Research Center Feb. 1966 13 p (NASA TN-D-3263; N66-15644*#)

SURVEY OF OPERATION AND COST EXPERIENCE OF THE X-15 AIRPLANE AS A REUSABLE SPACE VEHICLE. J. E. Love and W. R. Young. National Aeronautics and Space Administration, Flight Research Center Nov. 1966 12 p (NASA TN-D-3732; N67-11328*#)

TEST OF THE NAA X-15 MODEL IN THE JPL 21-INCH HYPERSONIC WIND TUNNEL. R. W. Weaver. Jet Propulsion Laboratory Apr. 18, 1963 42 p (NASA CR-50971; JPL-WT21-128, N63-22171)

THEORETICAL DYNAMIC ANALYSIS OF THE LANDING LOADS ON A VEHICLE WITH A TRICYCLE LANDING GEAR. R. B. Noll and J. M. McKay. National Aeronautics and Space Administration, Flight Research Center Aug. 1967 33 p (NASA TN-D-4075; N67-32394*#)

THEORETICAL INVESTIGATION OF THE SLIDEOUT DYNAMICS OF A VEHICLE EQUIPPED WITH A TRICYCLE SKID-TYPE LANDING-GEAR SYSTEM. R. B. Noll and R. L. Halasey. National Aeronautics and Space Administration, Flight Research Center 1963 32 p (NASA TN-D-1828; N63-16298)

THEORETICAL STABILITY DERIVATIVES FOR THE X-15 RESEARCH AIRPLANE AT SUPERSONIC AND HYPERSONIC SPEEDS INCLUDING A COMPARISON WITH WIND-TUNNEL RESULTS. H. J. Walker and C. H. Wolowicz. National Aeronautics and Space Administration Aug. 1960 116 p (NASA TM-X-287; N65-24060*#) (Declassified)

THERMAL PROTECTION SYSTEM X-15A-2 DESIGN REPORT. A. B. Price. Martin Co Jan. 13, 1968 287 p rev. 1 (NASA CR-82003; ER-14535; N68-25717*#)

TRANSONIC FLUTTER INVESTIGATION OF MODELS OF PROPOSED HORIZONTAL TAILS FOR THE X-15 AIRPLANE. L. S. Young. National Aeronautics and Space Administration, Langley Research Center Feb. 1961 41 p (NASA TM-X-442; N66-33328*#)

ULTRAVIOLET DAYGLOW AND STELLAR BRIGHTNESS MEASUREMENT FROM THE X-15 AIRCRAFT. L. R. Doherty. National Aeronautics and Space Administration. Mar. 1968 21 p (NASA CR-1017; N68-19590*#)

WIND-TUNNEL CALIBRATION OF A 40° CONICAL PRESSURE PROBE AT MACH NUMBERS FROM 3.5 TO 7.4. F. W. Burcham, Jr. National Aeronautics and Space Administration, Flight Research Center Jul. 1968 24 p (NASA TN-D-4678; N68-28801*#)

WIND-TUNNEL FORCE AND PRESSURE TESTS OF ROCKET-ENGINE NOZZLE EXTENSIONS ON THE 0.0667-SCALE X-15-2 MODEL AT SUPERSONIC AND HYPERSONIC SPEEDS. E. J. Montoya and J. Nugent. National Aeronautics and Space Administration, Flight Research Center Mar. 1969 63 p (NASA TM-X-1759; N69-20873*#)

A WIND-TUNNEL INVESTIGATION OF THE CARRY LOADS AND MUTUAL INTERFERENCE EFFECTS OF 1/40-SCALE MODELS OF THE X-15 AND B-52 AIRPLANES IN COMBINATION. R. T. Taylor and W. J. Alford, Jr. National Aeronautics and Space Administration, Langley Research Center Dec. 1959 135 p (NASA TM-X-184; N65-26633*#) (Declassified)

WIND-TUNNEL INVESTIGATION OF THE FLOW FIELD BENEATH THE FUSELAGE OF THE X-15 AIRPLANE AT MACH NUMBERS FROM 4 TO 8. E. J. Montoya and M. Palitz. National Aeronautics and Space Administration, Flight Research Center Nov. 1967 80 p (NASA TM-X-1469; N68-11147*#)

X-15 ANALOG AND DIGITAL INERTIAL SYSTEMS FLIGHT EXPERIENCE. M. E. Burke. National Aeronautics and Space Administration, Flight Research Center Jul. 1968 22 p (NASA TN-D-4642; N68-29404*#)

X-15 DATA DISPLAY SYSTEM. Space Labs., Inc. May 1966 83 p (NASA CR-460; N66-25560*#)

THE X-15 FLIGHT PROGRAM. N. A. Armstrong, et. al., In: NASA PROCEEDINGS OF THE SECOND NATIONAL CONFERENCE ON THE PEACEFUL USES OF SPACE: SEATTLE, May 8-10, 1962 Nov. 1962 p 263-271 (NASA SP-8; N63-11158)

THE X-15 FLIGHT RESEARCH PROGRAM IN RELATION TO THE DEVELOPMENT OF ADVANCED MILITARY AIRCRAFT. J. Fischel. In: Compilation of Papers Summarizing Some Recent NASA Research on Manned Military Aircraft. National Aeronautics and Space Administration Oct. 1960 p 73-85 (N67-33075*#)

X-15 NEARS 100th RESEARCH MISSION WITH FASTER VERSION DUE IN 1964. News Release 64-3. National Aeronautics and Space Administration Jan. 7, 1964 5 p (N64-12910*)

THE X-15 PROGRAM. J. A. Walker and J. Weil. In: AIAA 2nd Manned Space Flight Meeting 1963 p 295-307. (N63-23237)

THE X-15 PROGRAM. C. E. Yeager. In: Southwest Research Institute of Bioastronautics and the Exploration of Space Dec. 1965 p 535-551. (N66-23073 in N66-23048#)

THE X-15 PROJECT. RESULTS AND NEW RESEARCH. T. A. Toll and J. Fischel. Reprint from Astronautics and Aerospace Engineering Mar. 1964 p 20-28 National Aeronautics and Space Administration, Flight Research Center (NASA RP-186; N64-22066*)

THE X-15 PROJECT. Part 1: ORIGINS AND RESEARCH. J. V. Becker. Reprint from Astronautics Aerospace Engineering Feb. 1964 p 52-61 National Aeronautics and Space Administration, Langley Research Center (NASA RP-139; N64-20017*)

X-15 RESEARCH AIRCRAFT EMERGENCY ESCAPE SYSTEM. J. F. Hegenwald and J. F. Maddon. Advisory Group for Aeronautical Research and Deve.opment May 1959 36 p (AGARD Report 243)

X-15; RESEARCH AT THE EDGE OF SPACE. National Aeronautics and Space Administration 1963 36 p (NASA EP-9; N64-14407)

X-15 RESEARCH RESULTS WITH A SELECTED BIBLIOGRAPHY. W. H. Stillwell. National Aeronautics and Space Administration 1965 135 p (NASA SP-60; N65-20162*#)

YLR99-RM-1 ROCKET ENGINE OPERATING EXPERIENCE IN THE X-15 AIRCRAFT, J. F. Maher, Jr., C. W. O. Hinger, and V. N. Capasso, Jr. National Aeronautics and Space Administration, Flight Research Center Jul. 1964 27 p (NASA TN-D-2391; N64-25810*)

END

DATE

FILMED

APR 20 1970